

## Patent Abstracts of Japan

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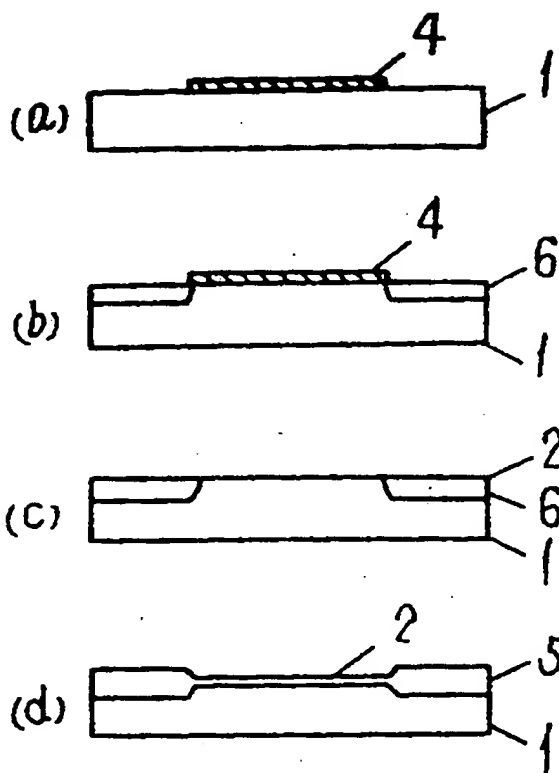
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APPLICANT : MATSUSHITA ELECTRONICS CORP;

INVENTOR : INOUE MORIO;

INT.CL. : H01L 21/316 H01L 21/94

TITLE : MANUFACTURE OF  
SEMICONDUCTOR DEVICE



ABSTRACT : PURPOSE: To enable to accurately obtain a very thin oxide film with little strain and an excellent film quality by a method wherein thermal oxide films with a different film thickness are simultaneously formed on the surface of the silicon substrate using an ion-implantation method and a laser oxidation method.

CONSTITUTION: A photo resist 4 is formed on a silicon substrate 1 into a selective oxide pattern. Then, accelerated ions are implanted in the exposed parts of the surface of the silicon substrate 1 and the implanted layers are turned into amorphous layers 6. After that, the photo resist 4 is removed, a laser beam is irradiated on the whole surface, and thermal oxide films 5 and a thermal oxide film 2, both respectively having a different film thickness, are simultaneously formed on the silicon substrate 1 utilizing the difference between the oxide film growth rates of the part of the single crystal silicon substrate 1 and the amorphous layers 6. At the time of oxidation, the substrate 1 is held being maintained in advance at the temperatures of 300–600°C and the oxidizing atmosphere shall be an oxidizing atmosphere under normal pressure or an atmosphere of vapor.

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